

### REMARKS

The above amendments and following remarks are submitted in response to the Official Action of the Examiner (i.e., Paper No. 9) mailed January 30, 2004. Having addressed all objections and grounds of rejection, originally presented claims 1-20 and newly presented claims 21-25, being all the pending claims, are now deemed in condition for allowance. Entry of these amendments and reconsideration to that end is respectfully requested.

The Examiner has objected to the drawings. Specifically, the Examiner has found that Figs. 1-3 contain only prior art under MPEP 608.02(g). Applicants disagree with the Examiner's findings and have previously provided their reasoning in this regard. Nevertheless the Examiner has continued his objection. Therefore, in furthering the prosecution of this application and under protest, Applicants have herewith provided the amended drawings as required by the Examiner.

The Examiner has further objected to various amendments made to the specification. Applicants disagree with the Examiner's findings in support of this objection. For example, Applicants do not understand how the deletion of the words "typical legacy" from page 6, line 8, and the deletion of the word "legacy" from page 7, line 3, could possibly constitute introduction of new matter as defined by 35 U.S.C. 132. Nevertheless, to further

advance the prosecution of this application, Applicants have herewith restored the original material in accordance with the Examiner's objection.

The Examiner has rejected claims 1, 2, 6, 7, 11, and 16 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,925,114, issued to Hoang (hereinafter referred to as "Hoang") in view of U.S. Patent No. 6,230,110, issued to Mitchell (hereinafter referred to as "Mitchell"). This ground of rejection is respectfully traversed for failure of the Examiner to make a *prima facie* case of obviousness as specified by MPEP 2143.

Specifically, the Examiner does not motivate the alleged combination of Hoang and Mitchell. In fact, the Examiner has pointed to the reasons why these two references teach away from each other. The Examiner states:

The *Hoang* reference teaches that there is a cost reduction advantage to emulating hardware components in software (**Col. 1 Lines 42-46**).....Thus, it would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the software emulation of the *Hoang* reference with the processor emulation technology of the *Mitchell* reference because, software driven emulators are is (sic) flexible and aids in the emulation/debugging process of developing a new processor (**Mitchell Col. 2 Lines 3-9**).

Though Hoang praises software emulation, Mitchell, on the other hand, relies upon hardware emulation. See, for example, the title of Mitchell which states:

Integrated circuit with embedded emulator and emulation system for use with such an integrated circuit.

This should be readily apparent to the most casual observer of Fig. 2, the first embodiment of the invention wherein the "emulation control processor" 2 is coupled via "interface card" 3 to the "Customer's Target Board". In short, Hoang emulates hardware with software, whereas Mitchell emulates hardware with hardware and only controls the emulation with software. Thus, the rejection is respectfully traversed, because the alleged combination is clearly not motivated.

The Examiner has not even attempted to meet his burden to show "reasonable likelihood of success" as is required by MPEP 2143. Therefore, the rejection is respectfully traversed, because there is no showing of reasonable likelihood of success.

Similarly, there is no showing of a "plurality of target processors". It seems clear that Hoang can only emulate a single modem, and Mitchell can only emulate a single "target processor". The claimed invention requires a "plurality of target processors". Apparently, the Examiner agrees, as he states in paragraph 6.6:

...the *Hoang* reference does not expressly disclose multiple target processors.

The rejection is respectfully traversed for failure of the Examiner to show that all of the claimed elements are shown in the alleged combination.

In rejecting claims 6 and 16, the Examiner simply states:

5.2 As regards independent **Claims 6 and 16** the *Hoang* reference discloses an apparatus (**Figure 1**).

Though the scope of claim 6 is different from the scope of either claim 1 or claim 11, this lack of examination is particularly noticeable with regard to claim 16, which is an apparatus claim having "means-plus-function" limitations. The Examiner is required to examine claim 16 in accordance with MPEP 2181, et seq. It is apparent that this has not been done. The rejection is respectfully traversed as improper in accordance with controlling law.

The rejection of claims 2 and 7 is respectfully traversed for failure to address the limitations of the claims. The Examiner confusingly states:

5.3 As regards **Claims 2 and 7** the *Hoang* reference discloses and (sic) emulation object and a computer program that are compatible with the first software architecture (**Figure 3, Col. 3 Lines 60-67, Co. 4 Lines 1-9**).

The rejection of claims 2 and 7 is respectfully traversed.

Claims 3-5, 8-10, 12-15, and 17-20 have been rejected under 35 U.S.C. 103(a) over *Hoang* in view of *Mitchell* in view of U.S. Patent No. 5,379,432, issued to Orton et al (hereinafter referred to as "Orton") and further in view of U.S. Patent No. 5,574,927, issued to Scantlin (hereinafter referred to as "Scantlin"). This ground of rejection is respectfully traversed for failure of the Examiner to make a *prima facie* showing of obviousness under MPEP 2143.

To the "unmotivated", "inoperative", and "incomplete" alleged combination of Hoang and Mitchell, the Examiner alleges the further combination of Orton and Scantlin. This alleged combination simply exacerbates the problems identified above. Orton involves a "high-level" software disclosure, which is unsuitable for emulation. "Host-based modem" 334 of Hoang, for example, runs under Background Real-Time priority. Hoang states at column 5, lines 25-26:

BRT is short for Background Real-Time and is the lowest priority level used by the host-based modem 334.....

This is clearly incompatible with the disclosure of Orton. Furthermore, Orton utilizes a non-compatible operating system. Orton, column 6, lines 3-5, states:

....the present invention shall be described herein with reference to the Mach micro-kernel.

Similarly, Scantlin involves very low-level micro-code emulation which is not compatible with any of the other three references. Therefore, the rejection based upon this alleged four reference combination is respectfully traversed as neither motivated, nor reasonably likely to succeed.

Furthermore, the alleged combination certainly does not meet the claim limitations. In rejecting claims 3, 9, 15, and 17-18, the Examiner states:

**6.2** As regards **Claim 3, 9, 15, 17 and 18** the *Hoang* reference does not expressly disclose an array of procedures or a list of instructions compatible with a second software architecture.

The *Orton et al.* reference discloses procedure calls (**Figure 2 Item 208**).

....The *Scantlin* references discloses a list of instructions compatible with a second software architecture (**Figure 3, Item 28**).

Even if these findings were not clearly erroneous, they are legally irrelevant, because they do not address the limitations of the rejected claims.

For example, claim 3 depends from claim 2 and is further limited by "wherein at least one of said plurality of emulation objects further comprises an array of procedures compatible with said first software architecture and a list of instructions compatible with a second software architecture". Even if Orton "discloses procedure calls" and even if *Scantlin* discloses a list of instructions compatible with a second software architecture as alleged by the Examiner, this does not meet the claim limitation. Furthermore, because Hoang does not have a "plurality of emulation objects", the alleged combination could not meet the claim limitation.

Similarly, claim 18 depends from claim 17 and is further limited by "wherein each of said array of procedures corresponds to a different one of said list of instructions". The Examiner does not even allege that the alleged combination meets this claim limitation. The rejection of claims 3, 9, 15, and 17-18 is respectfully traversed.

In rejecting claims 4, 8, 13-14, and 19-20, the Examiner simply states:

....the *Hoang* reference does not expressly disclose specialized instruction..

The Scantlin reference discloses specialized instructions for emulating another processor (**Figure 7, Col. 2 Lines 12-49**).

First, this statement is clearly erroneous. Instead of disclosing "specialized instructions", the Scantlin discloses only typical and ordinary instructions. Column 3, lines 63-64, states:

FIG. 7 is a flow diagram of the decode of a typical instruction: and (emphasis added)

Scantlin does not even claim to disclose any "specialized instructions". The rejection is respectfully traversed as based upon clearly erroneous findings of fact.

Second, even if these findings were not clearly erroneous, they would be legally irrelevant, because they do not address the limitations of the claims. Claim 4, for example, depends from claim 3 and is further limited by "wherein said list of instructions includes specialized instructions for communications processing". The rejection is respectfully traversed as a matter of law for failure of the Examiner to address the claim limitations.

In rejecting claim 5, the Examiner states:

....the Hoang reference does not expressly disclose an array of procedures corresponds to a list of instructions selected by using an operation code and a corresponding four-bit field.

The Scantlin reference discloses a four-bit field operational code field (sic) for selecting the correct emulation registers which emulate the target machine instructions (**Figure 7, Col.9 Lines 12-67**).

This statement is clearly erroneous. The system of Scantlin utilizes a five-bit op code field (see Figs. 5A and 5B). Furthermore, Fig. 7 and the cited text has nothing to do with the op code field. Most important, however, neither the cited portions nor the not cited portions of Scantlin discloses the limitations of claim 5. The rejection is respectfully traversed.

In rejecting claim 10, the Examiner states:

....the *Hoang* reference does not expressly disclose an array of instructions directly linked to a different set of instructions.

The *Scantlin* reference discloses an array of instruction directly linked to a different set of instructions (**Figures 2, 5A, 5B, 7**).

Claim 10 depends from claim 9 and is further limited by "wherein each of said procedures of said array of procedures is directly linked to a different one of said list of instructions". Because the Examiner has failed to address this additional limitation, he has failed to make a *prima facie* case of obviousness. The rejection of claim 10 is respectfully traversed.

In rejecting claim 12, the Examiner states:

....the *Hoang* reference does not expressly disclose multiple target processors.

The *Scantlin* reference discloses a plurality of target processors (**Col. 3 Lines 34-36, Col. 4 Lines 34-67, Col. 5 Lines 1-20**).

Again, the Examiner refuses to examine the actual limitations of the claims. Even if Scantlin "discloses a plurality of target processors", it does not meet the limitations of the claim. Claim 12 is a method claim depending from method claim 11. The



additional and unique limitations added by claim 12 adds method steps (i.e., repeating step b). The Examiner appears to completely ignore the actual claim. The rejection of claim 12 is respectfully traversed.

Newly presented claims 21-25, though differing in scope from originally presented claims 1-20, are deemed to be similarly patentable over the prior art of record.

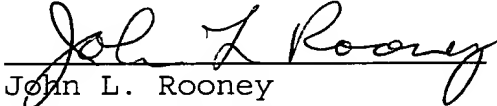
Having thus responded to each objection and ground of rejection, Applicants respectfully request entry of this amendment and allowance of claims 1-25, being the only pending claims.

Respectfully submitted,

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By his attorney,

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